

AMENDMENTS

In the Claims

The following is a marked-up version of the claims with the language that is underlined (“ ”) being added and the language that contains strikethrough (“~~—~~”) being deleted:

1. (Currently Amended) A method for transferring data between a host device and a storage medium via a buffer, comprising:

receiving from the host device a command to transfer data between the host device and the storage medium;

storing in a first register a value for tracking a number of data units that have been transferred into ~~[[a]]~~ the buffer but that have not yet been transferred out of the buffer;

storing in a second register a value corresponding to a number of data units to be transferred during an iteration of the transfer of the data between the host device and the storage medium;

transferring at least some of the data into the buffer responsive to the command;

modifying the value contained in the first register with the value stored in the second register in response to ~~a transfer of a data unit~~ a completed iteration of the transfer of the data into the buffer;

transferring at least some of the data out of the buffer; and

modifying the value contained in the first register in response to a transfer of a data unit out of the buffer;

~~storing in a second register a value for incrementing the value contained in the first register; and~~

~~incrementing wherein, during the transfer of the data between the host device and the storage medium, the value contained in the first register by the value contained in the second register corresponds to a number of data units currently stored in the buffer.~~

2. (Canceled)

3. (Currently Amended) The method of claim 1, ~~further comprising:~~

~~storing in a third register a value for wherein modifying the value contained in the first register with the value stored in the second register is accomplished by decrementing the value contained in the first register by the value stored in the second register; and~~
~~decrementing the value contained in the first register by the value contained in the third register.~~

4. (Currently Amended) The method of claim 1, further comprising:

storing in a third ~~fourth~~ register an address representing a location in the buffer where data is being transferred between the buffer and the host device; and

storing in a fourth ~~fifth~~ register an address representing a location in the buffer where data is being transferred between the buffer and the storage medium.

5. (Currently Amended) The method of claim 4, further comprising:

storing in a fifth ~~sixth~~ register an address representing a beginning of the buffer; and

storing in a sixth ~~seventh~~ register an address representing an end of the buffer.

6. (Currently Amended) The method of claim 5, further comprising:
storing in ~~an eighth~~ a seventh register a value representing a storage capacity of the buffer.
7. (Original) The method of claim 1, wherein the host device is a computer.
8. (Original) The method of claim 1, wherein the storage medium comprises non-volatile semiconductor memory.
9. (Original) The method of claim 1, further comprising:
implementing the method via an application specific integrated circuit (ASIC).
10. (Currently Amended) A data transfer system for transferring data between a host device and a storage medium, comprising:
a host interface ~~that receives~~ operative to receive from the host device a command to transfer data between the host device and the storage medium;
a buffer ~~that~~ operative to temporarily store[[s]] data that is transferred between the host device and the storage medium;
a first register ~~that~~ operative to store[[s]] a value for tracking a number of data units that have been transferred into the buffer but that have not yet been transferred out of the buffer; and
a second register ~~that~~ operative to store[[s]] a value for ~~incrementing~~ modifying the value contained in the first register, the value stored in the second register corresponding to a number of data units to be transferred during an iteration of the transfer of the data between the host device and the storage medium; and

~~a third register that stores a value for decrementing the value contained in the first register~~

wherein, in transferring the data between the host device and the storage medium, the value contained in the first register corresponds to a number of data units currently stored in the buffer.

11. (Previously Presented) The data transfer system of claim 10, wherein the data transfer system is configured to modify the value contained in the first register in response to a transfer of a data unit between the buffer and the host device.

12. (Previously Presented) The data transfer system of claim 11, wherein the data transfer system is configured to modify the value contained in the first register in response to a transfer of a data unit between the buffer and the storage medium.

13. (Canceled)

14. (Currently Amended) The data transfer system of claim 13, wherein the data transfer system is configured to decrement the value contained in the first register by 1 responsive to each data unit being transferred out of the buffer ~~the value contained in the third register.~~

15. (Currently Amended) The data transfer system of claim 10, further comprising:

a third ~~fourth~~ register that stores an address representing a location in the buffer where data is being transferred between the buffer and the host device; and

a fourth ~~fifth~~ register that stores an address representing a location in the buffer where data is being transferred between the buffer and the storage medium.

16. (Currently Amended) The data transfer system of claim 15, further comprising:
a ~~fifth~~ sixth register that stores an address representing a beginning of the buffer; and
a ~~sixth~~ seventh register that stores an address representing an end of the buffer.
17. (Currently Amended) The data transfer system of claim 16, further comprising:
~~an eighth~~ a seventh register that stores a value representing a storage capacity of the
buffer.
18. (Original) The data transfer system of claim 10, wherein the data transfer system is an
application specific integrated circuit (ASIC).
19. (Currently Amended) A method for transferring data between a host device and a
storage medium via a buffer, comprising:
receiving from the host device a command to transfer data between the host
device and the storage medium;
storing in a first register a value indicative of an amount of data that can be currently
stored in the buffer ~~for determining a buffer's fullness~~;
incrementing the value contained in the first register by a value contained in a second
register in response to an iteration of a data transfer into the buffer, the value in the second
register corresponding to a number of data units to be transferred during the iteration of the
transfer of the data between the host device and the storage medium; and
decrementing the value contained in the first register ~~by a value contained in
a third register~~ in response to a data transfer out of the buffer.
20. – 21. (Canceled)

22. (Currently Amended) An application specific integrated circuit (ASIC) for transferring data between a host device and a storage medium, comprising:

a buffer that temporarily stores data that is transferred between the host device and the storage medium;

a first register that stores a value corresponding to an amount of data that can be currently stored in the buffer ~~for determining the buffer's fullness;~~ and

a second register that stores a value corresponding to a number of data units to be transferred to the buffer such that, responsive to the number of data units being transferred into the buffer, the value stored in the first register is incremented with ~~for incrementing the~~ value contained in the ~~first~~ second register; and

~~a third register that stores a value for decrementing wherein, in response to a data transfer out of the buffer, the value contained in the first register is decremented by a value~~ corresponding to a number of data units transferred out of the buffer.

23. – 24. (Canceled)

25. (New) The method of claim 3, wherein modifying the value contained in the first register in response to a transfer of a data unit out of the buffer comprises incrementing the value contained in the first register.

26. (New) The method of claim 25, wherein incrementing comprises incrementing the value contained in the first register by 1 responsive to each data unit being transferred out of the buffer.